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PD-200114

78. (Previously Presented) A single reflector multiple beam antenna for forming multiple beams for a stratospheric transponder platform communication system comprising:

the reflector having a diameter (D) given by the equation:

$D = 65X / \text{HPBW}$ , where A is a wavelength, and HPBW is a half-power beam width of the antenna which is a function of an orbit angle subtended by an orbit of the stratospheric transponder platform at a platform altitude;

an antenna mount, the reflector being mounted at an end of the antenna mount and having a focal point;

a beam spacing mount mounted at another end of the antenna mount opposite to the reflector;

at least two feedhorns positioned on the beam spacing mount displaced from the focal point of the reflector by an offset;

an antenna mast supporting the antenna mount, and

a tilt arm for adjusting a tilt angle of the antenna mount.

79. (Previously Presented) The antenna of Claim 78, wherein the HPBW is approximately twice the orbit angle.

80. (Previously Presented) The antenna of Claim 78, wherein the at least two feedhorns are each capable of forming separate beams pointed respectively at at least two stratospheric transponder platforms.